

**REMARKS**

At the outset, the Examiner is thanked for the thorough review and consideration of the subject application. The final Office Action of April 30, 2004 and the Advisory Action of July 23, 2004 have been received and contents carefully reviewed.

By this Amendment, Applicant amends claims 1, 3 and 12, and cancels claim 18. Claims 20-24 have been withdrawn as the result of an earlier restriction requirement. Accordingly, claims 1-17 and 19-24 are currently pending in the present application. Reexamination and reconsideration of the application are respectfully requested.

In the Office Action, the Examiner rejected claims 1, 2 and 8 under 35 U.S.C. § 102(b) as being anticipated by Lo (U.S. Patent No. 5,779,927), and rejected claims 1-19 under 35 U.S.C. § 103(a) as being unpatentable over Jeong (U.S. Patent No. 6,228,211). Applicant respectfully traverses these rejections.

Claim 1 is allowable over the cited references in that claim 1 recites a combination of elements including, for example, “an etching bath having a bubble plate, the bubble plate for generating bubbles using a supplied gas... a DI and undiluted etchant supply part for supplying a DI water and an undiluted etchant, the undiluted etchant capable of etching the glass substrates with an exothermic reaction... an etchant heating part for heating the mixed etchant at a predetermined temperature to shorten an etching time of the glass substrates.” None of the cited references, singly or in combination, teaches or suggests at least this feature of the claimed invention.

Applicant respectfully submits that “in determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.” See M.P.E.P. § 2141.02. The present invention relates to an etching apparatus for etching glass substrates for a liquid crystal display, as claimed in claim 1. In the present application, because the etchant heating part heats the etchant at a predetermined temperature and the etching process involves an exothermic reaction between the etchant including HF and the glass substrates, the glass substrates are etched at a higher etch rate and the amount of the undiluted etchant used for the etching process is reduced. See the present application, for

example, paragraphs [0059]-[0061]. Different from the present application, Lo relates to a wet etching apparatus for etching silicon nitride in phosphoric acid at a high temperature. Thus, Applicant respectfully submits that Lo fails to teach the claimed invention as a whole, and “[t]his is part of the ‘subject matter as a whole’ which should always be considered in determining the obviousness of an invention under 35 U.S.C. § 103(a).” See M.P.E.P. § 2141.02.

In addition, Applicant respectfully submits that there is no motivation for one of ordinary skill to combine the cited references and arrive at the claimed invention with any reasonable expectation of success. As discussed above, Lo fails to teach the claimed invention which relates to an etching apparatus for etching glass substrates for a liquid crystal display. Thus, Applicant respectfully submits that there is no motivation for one of ordinary skill to combine Lo and Jung and arrive at the claimed invention with any reasonable expectation of success. Applicant further respectfully submits that the motivation to combine the references comes from the present invention and not from the cited references, which is impermissible.

For at least these reasons, Accordingly, Applicant respectfully submits that claim 1 and claims 2-11, which depend therefrom, are allowable over the cited references.

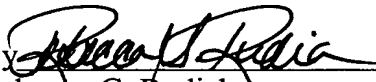
Claim 12 is allowable over the cited references in that claim 12 recites a combination of elements including, for example, “an etching bath containing an etchant and a bubble plate, the etchant capable of etching the glass substrates with an exothermic reaction... an etchant heating element for heating the etchant at a predetermined temperature to shorten an etching time of the glass substrates.” None of the cited references, singly or in combination, teaches or suggests at least this feature of the claimed invention. Accordingly, Applicant respectfully submits that claim 12, and claims 13-17 and 19, which depend therefrom, are allowable over the cited references.

Applicant believes the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited. If the Examiner deems that a telephone conference would further the prosecution of this application, the Examiner is invited to call the undersigned attorney at the telephone number (202) 496-7500. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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Respectfully submitted,

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